

U.S. Patent Application Serial No. 09/964,894  
Response dated January 22, 2004  
Reply to OA of October 24, 2003

**IN THE CLAIMS**

Please cancel claims 1-3 without prejudice or disclaimer.

Please add new claims 4-7 as follows:

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**Claims 1-3 (Canceled).**

**Claim 4 (New):** A membrane artificial lung for performing gas exchange between blood and a gas via the membrane by flowing blood on a first surface of the membrane and flowing oxygen or an oxygen-containing gas on a second opposing surface of the membrane,

said membrane comprising:

a1 a hollow fiber membrane comprising poly-4-methylpentene-1, and having an oxygen permeation rate  $Q(O_2)$  at 25°C of from  $1 \times 10^{-6}$  to  $3 \times 10^{-3}$  (cm<sup>3</sup>(STP)/cm<sup>2</sup>.sec.cmHg) and an ethanol flux of from 0.1 to 100 ml/min.m<sup>2</sup>; and

an ionic complex provided on said first surface of said membrane, said ionic complex comprising:

a first quaternary aliphatic alkylammonium salt having from 22 to 26 carbon atoms in total;

a second quaternary aliphatic alkylammonium salt having from 37 to 40 carbon atoms in total; and

heparin or a heparin derivative.

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**Claim 5 (New):** The membrane artificial lung according to claim 4, said first quaternary aliphatic alkylammonium salt comprises 5 to 35 wt% of the weight of said first and said second quaternary aliphatic alkylammonium salts, and said second quaternary aliphatic alkylammonium salt comprises from 65 to 95 wt% of said weight of said first and said second quaternary aliphatic alkylammonium salts.

**Claim 6 (New):** The membrane artificial lung according to claim 4, said first quaternary aliphatic alkylammonium salt comprises a dimethyldiododecylammonium salt and said second quaternary aliphatic alkylammonium salt comprises a dimethyldioctadecylammonium salt.

**Claim 7 (New):** The membrane artificial lung according to claim 5, said first quaternary aliphatic alkylammonium salt comprises a dimethyldiododecylammonium salt and said second quaternary aliphatic alkylammonium salt comprises a dimethyldioctadecylammonium salt.